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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,770	01/21/2004	Douglas E. Weiss	59420US002	3526
32692	7590	06/24/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			KHATRI, PRANAV V	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	

2872

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/761,770

**Applicant(s)**WEISS ET AL. **Examiner**

Pranav V. Khatri

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/21/04, 02/23/04, 01/05/2005 PL, 4/26/2005 PL</u> | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, and 9-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Stump et al (US Patent No 5,835,271).

Regarding claim 1, Stump et al discloses a pavement marking (abstract Line 8) comprising a plurality of retroreflective elements (Fig 10, Numeral 80) partially embedded in a binder (86) wherein the retroreflective elements have an exposed outer viewing surface (retroreflective elements 80 are exposed to be viewed from the outside) comprising retroreflective sheeting (82) and a layer beneath the viewing surface comprising a shrunk film layer (84, which is made of thermoplastic resin Col 3 Lines 14-20, same material as the shrink film layer of the present invention).

Regarding claim 3, wherein a cross-section of at least a portion of the retroreflective elements comprises an edge of sheeting in a substantially circular shape (Fig 5, Col 6 Lines 15-19, and Col 2 Lines 43-45).

Regarding claim 4, wherein at least a portion of the retroreflective elements comprise an outside diameter ranging from about 0.5 mm to 4 mm (Col 5 Line 65 – Col 6 Line 1).

Regarding claim 5, wherein at least a portion of the retroreflective elements comprise a substantially solid core (Fig 4 and Fig 5).

Regarding claim 9, wherein the retroreflective sheeting is selected from the group comprising exposed-lens sheeting and enclosed-lens sheeting (Col 2 Lines 18-23).

Regarding claim 10, wherein the retroreflective sheeting is exposed-lens sheeting comprising a specular reflective coating spaced apart from a monolayer of optical elements (Col 2 Lines 12-16).

Regarding claim 11, wherein the retroreflective sheeting (82) comprises optical elements selected from glass microspheres (94), glass-ceramic microspheres, and cube corner elements (Fig 10 and Col 7 Lines 26-28).

Regarding claim 12, wherein the optical elements (94) are at least partially embedded in a polymeric layer (84) (Fig 10, and Col 7 Lines 25-28, thermoplastic layer of reference is the same as polymeric layer).

Regarding claim 13, wherein the optical elements are selected from transparent microspheres, colored transparent microspheres, and microspheres (94) having a specular reflecting coating (Col 2 Lines 12-16).

Regarding claim 14, wherein the shrunk film is selected from group consisting of heat shrinkable film and elastomeric film (84, which is made of thermoplastic resin Col 3 Lines 14-20, same material as the shrink film of the present invention).

Regarding claim 15, wherein the heat shrinkable film comprises a cross-linked semi-crystalline polymer (84, which is made of thermoplastic resin Col 7

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Lines 17-18 and Col 3 Lines 13-20, same material as the shrink film comprised of semi-crystalline of the present invention).

Regarding claim 16, further comprising at least one group comprising other retroreflective elements, optical elements (94), skid particles, and combination thereof.

Regarding claim 17, a retroreflective element (80) comprising an exposed outer viewing surface (retroreflective elements 80 are exposed to be viewed from the outside) comprising retroreflective sheeting (82) and a layer beneath the viewing surface comprising a shrunk film layer (84).

Regarding claim 18, wherein the element comprises a substantially solid core (Fig 4 and Fig 5).

Regarding claim 19, wherein the element is at least partially filled (Fig 10 Numeral 80 is partially filled with 84) with at least one material selected from the shrinkable film (84), a filament, a polymeric material, and combinations thereof.

Regarding claim 20, a retroreflective article (78) comprising the retroreflective elements (80) of claim 17 at least partially embedded in a binder (86).

Regarding claim 21, the retroreflective article (78) of claim 17 wherein is the article is retroreflective sheeting (82).

Regarding claim 22, the retroreflective article (78) of claim 17 wherein the article is selected from the group consisting of signs, tapes, personal safety apparel, and traffic devices (abstract Lines 7-10).

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Regarding claim 23, a surface comprising a plurality of the retroreflective elements (80) of claim 17 partially embedded in a binder (86).

Regarding claim 24, a laminate (Col 2 Lines 3-4) comprising retroreflective sheeting (82) having a viewing surface (retroreflective elements 80 are exposed to be viewed from the outside) and an opposing surface (86) and a shrinkable layer (84) permanently bonded to the opposing surface of the sheeting.

Regarding claim 26-28, the method of making retroreflective elements including steps of providing, shrinking and attaching are inherently met by the disclosure of the prior art.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stump et al.

Stump et al. discloses the claimed invention as set forth above except for a cross-section of at least a portion of the retroreflective elements comprises an edge of the sheeting in a shape of at least one coil.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the shape of the sheeting as suggested by Stump et al., (Col 2 Lines 41-45), since such a modification would have involved

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a new change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). One could easily change the shape to a coil because a coil would improve the reflecting capability of the retroreflective element, and it would further increase the reflective capability of the pavement marking system.

Claims 6- 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stump et al. in view of Fei (US Patent No. 5,419,651).

Stump et al. discloses the claimed invention as set forth above except for wherein at least a portion of the retroreflective elements comprise a cavity.

However, Fei teaches at least a portion of the retroreflective elements comprise a cavity (see Fei Col 3 22-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the teachings of Stump et al. retroreflective element with a cavity from Fei because the combination would allow a suitable potting compound to be poured into the open cavity which hardens and produces a secure hermetic seal for the pavement marker (see Fei Col 5 Line 66 – Col 6 Line 3).

Regarding claim 7, as a combination of Stump et al. in view of Fei discloses wherein the cavity is discontinuous (see Fei Fig 5 Numeral 34 and 36, and Col 3 Lines 30-34, the office interprets 34 and 36 to be breaks or interruptions which is discontinuous).

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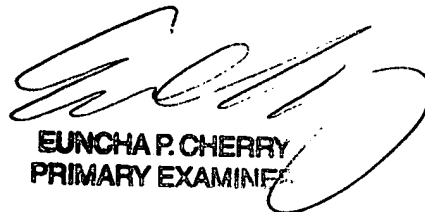
Regarding claim 8, as a combination of Stump et al. in view of Fei discloses wherein the cavity of at least a portion of the retroreflective elements is at least partially filled with the binder (see Fei Col 3 Lines 26-29).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pranav V. Khatri whose telephone number is 571-272-8311. The examiner can normally be reached on M-F, 8:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pranav Khatri  
Examiner  
Art Unit 2872



EUNHA P. CHERRY  
PRIMARY EXAMINER



